

Serial No. 09/873,674
Attorney Docket No. F0537
Firm Reference No. AMDSP0429US

Reply to Office Action Dated May 21, 2003
Reply Dated July 22, 2003

AMENDMENTS IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

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1. (Currently amended) A straddled gate device formed on a semiconductor-on-insulator (SOI) substrate having active regions defined by isolation regions and an insulator layer, the device comprising:
 - a first gate defining a first channel region interposed between a source and a drain formed within the active region of the SOI substrate;
 - a second gate straddling the first gate defining second channel regions interposed between the first channel region and the source and the drain; and
 - a contact connecting the first gate with the second gate; and
 - a dielectric layer separating the first gate and the SOI substrate, the dielectric layer having a relative permittivity greater than SiO₂.
 2. (Original) The straddled gate device according to claim 1, wherein the first gate defines a work function and the second gate defines a second work function.
 3. (Original) The straddled gate device according to claim 2, wherein the second work function of the second gate is 0.3 – 0.5 eV less than the work function of the first gate.
 4. (Original) The straddled gate device according to claim 1, wherein the source and the drain include main source and drain regions and source and drain extension regions.
 5. (Previously amended) The straddled gate device according to claim 1, includes a silicide layer formed on the source and the drain.
 6. (Previously amended) The straddled gate device according to claim 5, wherein the silicide layer which is formed on the source and the drain has a thickness in a range between 100 Å and 400 Å.

Serial No. 09/873,674
Attorney Docket No. F0537
Firm Reference No. AMDSP0429US

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Reply Dated July 22, 2003

7. (Previously amended) The straddled gate device according to claim 5, including a second silicide layer formed on electrodes of the second gate.

8. (Previously amended) The straddled gate device according to claim 7, wherein the second silicide layer formed on the electrodes of the second gate has a thickness in a range between 100 Å and 400 Å.

9. (Previously amended) The straddled gate device according to claim 7, wherein the silicide layer formed on the source and the drain and the second silicide layer formed on the electrodes of the second gate are of silicide of different species.

10. (Currently represented) ~~The straddled gate device according to claim 1,~~ A straddled gate device formed on a semiconductor-on-insulator (SOI) substrate having active regions defined by isolation regions and an insulator layer, the device comprising:

a first gate defining a first channel region interposed between a source and a drain formed within the active region of the SOI substrate;

a second gate straddling the first gate defining second channel regions interposed between the first channel region and the source and the drain; and

a contact connecting the first gate with the second gate,

wherein the semiconductor-on-insulator substrate is a germanium-on-insulator (GOI) substrate.

11. (Previously amended) The straddled gate device according to claim 10, further includes;

a silicide layer formed on main source and drain regions and source and drain extension regions included in the source and the drain,

wherein the silicide layer which is formed on the main source and drain regions and the source and drain extension regions has a thickness in a range between 100 Å and 400 Å.

Serial No. 09/873,674
Attorney Docket No. F0537
Firm Reference No. AMDSP0429US

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Reply Dated July 22, 2003

12. (Previously amended) The straddled gate device according to claim 11, including a second silicide layer formed on electrodes of the second gate.

13. (Previously amended) The straddled gate device according to claim 12, wherein the second silicide layer formed on the electrodes of the second gate has a thickness in a range between 100 Å and 400 Å.

14. (Previously amended) The straddled gate device according to claim 13, wherein the silicide layer formed on the main source and drain regions and the source and drain extension regions and the second silicide layer formed on the electrodes of the second gate are of silicide of different species.

15-20. (Cancelled)

21. (Previously added) The straddled gate device according to claim 1, wherein when the device is in an off state (Ioff), a length of an active channel is defined by the first gate and the second gate and when the device is in the on state (Ion), the length of the active channel is defined by the first gate.

22. (Previously added) The straddled gate device according to claim 4, includes a silicide layer formed on the main source and drain regions.

23. (Previously added) The straddled gate device according to claim 1, further including:
a liner interposed between the first gate and the second gate.

24. (Currently represented) ~~The straddled gate device according to claim 1,~~ A straddled gate device formed on a semiconductor-on-insulator (SOI) substrate having active regions defined by isolation regions and an insulator layer, the device comprising:

Serial No. 09/873,674
Attorney Docket No. F0537
Firm Reference No. AMDSP0429US

Reply to Office Action Dated May 21, 2003
Reply Dated July 22, 2003

a first gate defining a first channel region interposed between a source and a drain formed within the active region of the SOI substrate;

a second gate straddling the first gate defining second channel regions interposed between the first channel region and the source and the drain; and

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a contact connecting the first gate with the second gate,
wherein the liner includes a segment separating the second gate and the SOI substrate.

25. (Previously added) The straddled gate device according to claim 24, wherein a dielectric layer is disposed between the segment separating the second gate and the SOI substrate.

26. (Cancelled)

27. (New) The straddled gate device according to claim 1, wherein the SOI substrate is a fully depleted SOI (FDSOI) substrate.
